

**REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on September 25, 2003, and the references cited therewith.

Claim 1, 3, 4, 5, 6, 17, and 19 are amended and claim 18 is canceled. As a result, claims 1-8, 12-17 and 19-20 are now pending in this application. No new subject matter is added.

**§112 Rejection of the Claims**

**Claims 1-8 and 12-19 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.** To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

The Examiner objected to the molecular weight term in Claims 1 and 6. These claims have been amended to indicate that the molecular weight of the polymer is a number average molecular weight ( $M_n$ ). This is supported by the specification in the table at pages 13-14. In view of these amendments, applicants believe that the objection to these claims has been overcome.

The Examiner objected to claims 17-19 as allegedly unclear as the (A) monomers of claim 1 allegedly overlapped the additional (A) monomers in claim 17. Applicants have amended claim 1 to recite specific acrylate or methacrylate esters that are useful as the (A) monomers. Claim 17 has been amended to clarify the subject matter applicants regard as their invention. Claim 18 has been amended to recite specific optional monomers.

It is respectfully submitted that as amended, there is no overlap between the (A) monomers in claim 1 and the optional (A) monomers recited in claims 17 and 18. Applicants respectfully submit that these amendments overcome the objections to claims 17-19.

Accordingly, it is respectfully requested that the rejection under 35 USC § 112, second paragraph be withdrawn.

**§103 Rejection of the Claims**

**Claims 1-8 and 12-19 were rejected under 35 USC § 103(a) as being unpatentable over Legrand *et al.* (WO 97/28200; equivalent application: AU 199716064 B2; “the ‘064**

**application”).** Legrand is said to disclose pigment dispersants having a polymer produced by polymerization of a hydrophilic macromer and another monomer. To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not establish a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. M.P.E.P. §2142. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. M.P.E.P. §2142.

The branched polymers of the invention comprise a mixture of monomers including 50 to 93 wt.% of at least one ethylenically unsaturated monomer, wherein the monomer includes an acrylate ester or a methacrylate ester, 2 to 25 wt.% of at least one ethylenically unsaturated macromonomer with a number average molecular weight of 1,000 to 20,000 and 5 to 25 wt.% of at least one polymerisable imidazole derivative. The macromonomer has an unsaturated group to react with the other vinyl monomers when forming the backbone of the polymer.

Applicants respectfully submit that the branched polymers recited in claims 1-8 and 12-19 are not *prima facie* obvious over Legrand *et al.* because there is no teaching or suggestion in the ‘064 application disclosure that the polymers of the present claims could be prepared and used successfully.

The graft copolymers of Legrand *et al.* require at least three sequences, each having a different chemical nature. The copolymers in Legrand require a sequence allowing them to be anchored on solid particles, at least 1 sequence of hydrophilic and at least 1 sequence of hydrophobic character. (See page 1, lines 1-2 and page 3, lines 25-27).

Legrand teaches that the hydrophilic sequence has functional groups. Specifically, Legrand discloses monomers bearing hydroxy (-OH), acid (e.g., -COOH) and epoxy functions are required in the hydrophilic sequence (see page 10, lines 4-11, of the ‘064 application). some examples include hydroxylated compounds such as 2-hydroxyethyl (meth)acrylate. Applicants

respectfully submit that it would not have been obvious to eliminate the sequence having the hydrophilic groups disclosed in Legrand to obtain the claimed invention.

Furthermore, the Legrand disclosure repeatedly states that the plurality of chemical functions within the same copolymer is a required feature of the invention because it improves the compatibility with resins and enhances the formulation from a wide range of binding agents (see page 3, lines 17-21). Thus, a person skilled in the art would not have a reasonable expectation of success that the branched polymers of the present invention would be achieved by reading the disclosure in Legrand.

**Claims 1-8 and 12-19 were rejected under 35 USC § 103(a) as being unpatentable over Tetsuo (JP 63154769).** Tetsuo discloses a pigment dispersant that has a co-polymer having “fatty acid modified (meth)acrylic monomers” in the polymer. To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

Applicants respectfully submit that the polymers recited in claims 1-8 and 12-19 are not obvious in view of Tetsuo. Tetsuo discloses a pigment disperant co-polymer having a fatty acid modified (meth)acrylic monomer, a macromonomer and a nitrogen containing monomer. As amended, the instant claims require that the (A) monomers include specific acrylate or methacrylate esters recited in claim 1. Tetsuo does not disclose or suggest any of the (A) monomers of the instant claims. In addition, it is respectfully submitted that there is no teaching or suggestion to modify the disclosure of Tetsuo by substituting the acrylate or methacrylate esters of the instant claims for the fatty acid modified monomers of Tetsuo. Further, there is no reason that a skilled artisan would have reason to expect that the polymer disclosed in Tetsuo would function properly if the fatty acid modified acrylates were replaced acrylates claimed in the present invention.

Thus, one skilled in the art would not be lead to applicants' invention from the teachings of Tetsuo.

**Claims 1-8 and 12-19 were rejected under 35 USC § 103(a) as being unpatentable over Horn et al. (US 5,106,875).** Horn is said to disclose a component “A” which is an olefinically unsaturated polyoxyalkylene alcohol or polyester. This rejection is respectfully traversed.

Applicants respectfully submit that the polymers recited in the instant claims are not obvious in view of Horn. Horn discloses a copolymer having a polyoxyalkylene alcohol adduct or polyester alcohol monomer and a vinyl monomer (see column 5, lines 3-17). Applicants respectfully submit that the macromers recited in the present claims are based on copolymers selected from a specific group of acrylates or methacrylates. Horn does not teach or suggest a copolymer made of the acrylates and methacrylates of the instant claims. The copolymers disclosed in Horn contain caprolactone-polyesters and polyoxyalkylene alcohols (see column 7, lines 5-65). Horn does not teach or suggest the branched polymers prepared from the ethylenically unsaturated monomers recited in claim 1 in the backbone polymer as recited in the present claims. It is respectfully submitted that one skilled in the art would not have been motivated to modify Horn to provide the branched polymers of the present invention.

Accordingly, Applicants respectfully request the rejections of claims 1-8, 12-17 and 19 under 35 USC § 103(a) over Legrand, Tetsuo and Horn be withdrawn.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

Serial Number: 10/010433

Filing Date: December 7, 2001

Title: BRANCHED POLYMERS CONTAINING IMIDAZOLE GROUPS AND THE PRODUCTION AND USE THEREOF

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Dkt: 1238.006US2

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612-373-6968) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date January 26, 2004

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 26<sup>th</sup> day of January, 2004.

PATRICIA A. HULTMAN

Name

Signature

